WHAT IS CLAIMED IS:

1. An aerosolizer for intranasal administration of an immunogenic composition comprising an immunizing amount of Nontypeable *Haemophilus influenzae* (NTHi) or *Moraxella catarrhalis* lipooligosaccharide (LOS) from which at least one primary O-linked fatty acid has been removed to form detoxified LOS (dLOS) and an immunogenic carrier covalently linked thereto, optionally wherein said dLOS and said immunogenic carrier are covalently linked by a linker, and a mucosal adjuvant or delivery system.

2. A method for inducing an immunological response comprising intranasal administration of an immunogenic composition comprising an immunizing amount of Nontypeable *Haemophilus influenzae* (NTHi) or *Moraxella catarrhalis* lipooligosaccharide (LOS) from which at least one primary O-linked fatty acid has been removed to form detoxified LOS (dLOS) and an immunogenic carrier covalently linked thereto, optionally wherein said dLOS and said immunogenic carrier are covalently linked by a linker, and a mucosal adjuvant or delivery system, whereby colonization by NTHi or *M. catarrhalis* is inhibited or otitis media or other respiratory disease caused by NTHi or *M. catarrhalis* infection is prevented.

3. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises aluminum salts.

4. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises chitosan.

5. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises cytokines.

6. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises saponins.

7. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises muramyl dipeptide (MDP) derivatives.

8. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises CpG oligos.

9. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises lipopolysaccharide (LPS) of gram-negative bacteria.

10. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises monophosphoryl lipid A (MPL)

11. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises polyphosphazenes.

12. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises emulsions.

13. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises virosomes.

14. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises Iscoms.

15. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises cochleates.

16. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises poly(lactide-co-glycolides) (PLG) microparticles.

17. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises poloxamer particles.

18. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises virus-like particles.

19. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises heat-labile enterotoxin (LT) B subunit.

20. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises cholera toxin (CT) B subunit.

21. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises mutant toxins.

22. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises microparticles.

23. The aerosolizer or method of claims 1 or 2, wherein said mucosal adjuvant or delivery system comprises liposomes.